

Thermodynamics MCQ Question Answer

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Question: 1.

In a thermal decomposition reaction, sign of ΔH may be...

- Option A. positive
- Option B. negative
- Option C. No sign
- Option D. positive or negative.

Question: 2. The total heat content of a system is known as....

- Option A. Enthalpy
- Option B. Thermal Energy
- Option C. Entropy
- Option D. Activation Energy

Question: 3. In reaction $C(s) + O_2(g) \rightarrow CO_2(g)$ $\Delta H = -94.3 \text{ K cal mol}^{-1}$

- Option A. $HP < HR$
- Option B. $HP > HR$
- Option C. $2HP = 3HR$
- Option D. $HP = HR$

Question: 4. The heat of neutralisation of a strong acid and a strong base is equal to.....K. Cal gm eq⁻¹

- Option A. 27.3
- Option B. 31.7
- Option C. 15.7
- Option D. 13.7

Question: 5. Internal energy of the elements is assigned a value of.....cal per mole at standard states.

- Option A. 5
- Option B. 9
- Option C. 99
- Option D. 0

Question: 6. The apparatus used for measuring the heat changes is known as ...

- Option A. Thermometer
- Option B. Ammeter
- Option C. Voltmeter
- Option D. Calorimeter

Question: 7. The highest temperature at which vapour pressure of a liquid can be measured is..

- Option A. the boiling point of the liquid
- Option B. critical solution temperature
- Option C. ionisation temperature
- Option D. inversion temperature

Question: 8. If temperature is kept constant during the reaction, the process is said to be.....

- Option A. Adiabatic
- Option B. Isobaric
- Option C. Isothermal
- Option D. none of above

Question: 9. The factor that does not influence the heat of reaction is...

- Option A. method by which reactants change to products
- Option B. chemical state of the reactants and products
- Option C. whether it is taking place at constant temperature
- Option D. All the above

Question: 10. The solution energy of Al^{+++} ion is more than that of Mg^{++} due to...

- Option A. high ionisation energy of Al^{+++} ion
- Option B. greater size of Al^{+++} ion
- Option C. greater charge on Al^{+++} ion
- Option D. small size of Al^{+++} ion

Question: 11. 1 Joule is equal to

- Option A. 2.39 Cal
- Option B. 0.04184 Cal
- Option C. 1.390 Cal
- Option D. 0.239 Cal

Question: 12. Heat of combustion of methane and ethane are -291.7 Kcal & - 441.2 Kcal respectively:

- Option A. Methane is a better fuel because ethane is poisonous
- Option B. Methane is a better fuel than C_2H_6
- Option C. Ethane is a better fuel than CH_4
- Option D. Both are equally efficient as a fuel

Question: 13. Heat of fusion of a molecular solid is

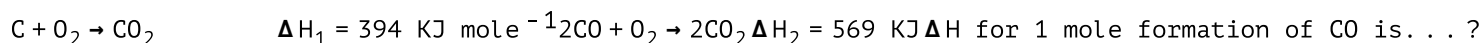
- Option A. high
- Option B. low

- Option C. average
- Option D. very high

Question: 14. Heat of Reaction between sodium hydroxide and hydrochloric acid is $57.32 \text{ KJ mole}^{-1}$. So heat of dissociation of water is

- Option A. $-57.32 \text{ KJ mole}^{-1}$
- Option B. $+23.7 \text{ KJ mole}^{-1}$
- Option C. $+57.32 \text{ KJ mole}^{-1}$
- Option D. $-13.7 \text{ KJ mole}^{-1}$

Question: 15. For the reaction



- Option A. $+265.0 \text{ KJ mole}^{-1}$
- Option B. $-165.0 \text{ KJ mole}^{-1}$
- Option C. $-109.5 \text{ KJ mole}^{-1}$
- Option D. $+109.5 \text{ KJ mole}^{-1}$

Question: 16. The heat change taking place in the reaction



- Option A. -11.3 Kcal
- Option B. $+11.3 \text{ Kcal}$
- Option C. -17.3 Kcal
- Option D. 125.5 Kcal

Question: 17. The enthalpy of the elements in their standard states is taken as zero. So the enthalpy of formation of a compound may be

- Option A. negative
- Option B. positive
- Option C. zero
- Option D. negative or positive

Question: 18. Heat of neutralisation of HCl and NaOH is -57.32 KJ per gram equivalent and that of acetic acid and NaOH is -55.23 KJ per gram equivalent. The heat of dissociation of acetic acid per gram equivalent should be?

- Option A. -2.09
- Option B. 2.09
- Option C. -2.1%
- Option D. 2.196

Question: 19. Heat of reaction

- Option A. depends on the rate of reaction

- Option B. depends on pressure
- Option C. is independent of temperature
- Option D. may or may not depend on temperature

Question: 20. A person requires 2870 Kcal of energy for leading a normal life. If heat of combustion of cane sugar is -1349 Kcal then he must consume.....kg of cane sugar daily.

- Option A. 728
- Option B. 448
- Option C. 142
- Option D. 224

Question: 21. A person requires 2870 Kcal of energy for leading a normal life. If heat of combustion of cane sugar is -1349 Kcal then he must consume.....kg of cane sugar daily.

- Option A. 728
- Option B. 448
- Option C. 142
- Option D. 224

Question: 22. On burning hydrogen in an atmosphere of chlorine, 1.65 gm of HCl was obtained and 1 Kcal of heat was liberated. The heat of formation of HCl should be ?

- Option A. $-21.12 \text{ Kcal mol}^{-1}$
- Option B. $-44.2 \text{ Kcal mol}^{-1}$
- Option C. 500 cal mol^{-1}
- Option D. 500 cal gm^{-1}

Question: 23. 10 gm of ice at 0°C is placed into 100 gm of water at 50°C . The temperature of water after the whole ice has melted will be

- Option A. 32.8°C
- Option B. 19.5°C
- Option C. 31.8°C
- Option D. 38.1°C

Question: 24. In a spontaneous irreversible process, the total entropy of the system & its surroundings

- Option A. is constant
- Option B. decreases
- Option C. increases
- Option D. is zero

Question: 25. For a reaction $2 \text{SO}_2(\text{g}) + \text{O}_2(\text{g}) \rightarrow 2 \text{SO}_3(\text{g})$ $\Delta G^{\circ} = -141.8 \text{ KJ}^{-1}$

So the driving force for the reaction is?

- Option A. +198.0 KJ
- Option B. -198 KJ
- Option C. -118.67 KJ
- Option D. 187.8 KJ

Question: 26. Heat of combustion of S (Rhombic) and S (monoclinic) are -297.5 KJ and -300 KJ mole^{-1} respectively. So the heat of transformation of SR to SM is

- Option A. 2.5 KJ mole^{-1}
- Option B. +1.5 KJ mole^{-1}
- Option C. +297.5
- Option D. 3.5 KJ mole^{-1}

Question: 27. The molar entropy of vaporisation of a liquid at its boiling point is

- Option A. 25 $\text{JK}^{-1}\text{mole}^{-1}$
- Option B. 100 $\text{JK}^{-1}\text{mole}^{-1}$
- Option C. 80 $\text{JK}^{-1}\text{mole}^{-1}$
- Option D. 90 $\text{JK}^{-1}\text{mole}^{-1}$

Question: 28. 35.5 gm of chlorine gas is allowed to expand freely in vacuum at 25°C. Then ΔH for this process is

- Option A. Zero
- Option B. 25 cal.
- Option C. 17.2 J
- Option D. 52.4 cal

Answer Sheet

1	A	
2	A	
3	A	
4	D	
5	D	
6	D	
7	A	
8	C	
9	A	
10	D	
11	D	
12	B	
13	B	
14	C	
15	C	
16	B	
17	D	
18	D	
19	C	
20	A	
21	A	
22	A	
23	D	
24	C	
25	B	
26	A	
27	D	